5 Eng. Hist. Topogra. vol 14

A SHORT HISTORICAL ACCOUNT OF BRISTOL BRIDGE;

WITH

A Propoſition for a new Stone Bridge,

From TEMPLE SIDE to the Oppoſite Shore.

AS ALSO

An Account of ſome remarkable Stone Bridges abroad (and what the beſt Authors have ſaid and directed concerning the Methods of building them)

LIKEWISE,

An Account of ſome Bridges of Note in England.

Humbly offered to the Conſideration of the Right Worſhipful HENRY MUGGLEWORTH, Eſq; Mayor; the Worſhipful the Recorder and Aldermen, the Sheriffs, and Common Council Men of the city of *Briſtol*; and alſo to the Worſhipful the Maſter, Wardens, Aſſiſtants and Commonalty of the Society of Merchants Adventurers, and principal Inhabitants of this City, and Country adjacent, by *their moſt obedient and moſt impartial humble Servant*,

A CITIZEN.

Bid Harbours open, publick Roads extend,
And Temples worthier of the Gods aſcend;
Bid the broad Arch the dangerous Flood contain,
The Mole projected break the roaring Main;
Back to his Bounds, their Subject Sea command,
And roll obedient Rivers through the Land:
Theſe Honours, Peace to happy Britain brings;
Theſe are Imperial Works, and worthy Kings.

POPE's EPIST.

BRISTOL:
Printed, and Sold by E. WARD, oppoſite the POST-OFFICE, 1759. [Price 1*s.*]

Advertiſement.

AS the Profits ariſing from the Sale of this Pamphlet will abſolutely be appropriated towards the rebuilding of St. *Werburgh*'s Church, the Author hopes the Purchaſers will encourage the Sale by not lending the Book.

TO

The Worſhipful the MAYOR, RECORDER, ALDERMEN, SHERIFFS, &c. &c.

GENTLEMEN,

I Have the honour to lay before you ſome thoughts upon a ſubject, I am perſuaded, will be no ways unacceptable to be ſpoke of to you; whoſe intereſt from your ſtations, known humanity, zeal for the public, and candour to all, can never be neglected.

For which reaſons I preſume to addreſs myſelf to you, in behalf of the publick in general, and humbly offer to lay before you, the following obſervations, for your peruſal and conſideration.

I am, with the greateſt duty and regard,

GENTLEMEN,

Your moſt obedient ſervant,

A CITIZEN.

A SHORT

HISTORICAL ACCOUNT

OF

BRISTOL BRIDGE;

WITH SOME

REMARKS and OBSERVATIONS on the preſent bad State and Condition of it.

AS ALSO

A Propoſition for a cheap and laſting Remedy.

THE riches, honour, and happineſs of a kingdom, common-wealth, or city, are the reſult of good regulations in all branches of the government; but more particularly in thoſe branches which relate to commerce, navigation, manufactures, and agriculture; and the advancement of ſuch arts, ſciences, and honourable profeſſions, as tend to civilize and profit the community: And while theſe prudent maxims obtained, and were encouraged by the antient *Greeks* and *Romans*, thoſe nations were at the height of their grandeur and reputation. Of thoſe ſeveral uſeful ſciences, I ſhall at preſent only conſider

ſider that of Architecture and Publick Buildings; and this no farther, than it relates to the erecting Bridges of Stones; nothing conducing more to facilitate and promote the trade and proſperity of towns and cities, than ſuch commodious edifices, for an eaſy and publick acceſs.

I ſhall, therefore, begin with ſome brief remarks upon the original ſtate of *Briſtol* Bridge, and proceed to conſider the propoſition now on foot, for erecting a new one, over the river *Avon*, from *Temple* ſide to the oppoſite ſhore.

In the year 1247, it appears, by record, that there was no better communication between *Somerſetſhire* and *Glouceſterſhire*, over the river *Avon*, than a ferry from St. *Thomas* ſlip to the *Shambles*, (where the ſhips did formerly lay) which was undoubtedly, like moſt other ferries, inſufficient for the carrying on the buſineſs and commerce of two ſuch growing towns: And in this year the Mayor and Commonalty concluded to build a bridge over the river *Avon*, with the conſent of the Governors of *Redclift* and *Temple*, thereby to incorporate them with the town of *Briſtol*. And for the better performance of building the ſaid bridge, the water was conveyed under the bridges of

Redclift

Redcliſt and *Temple* gates, (being made for the ſame purpoſe;) alſo the trench was made from the river *Froome*, Gibb, to the head of the *Key*, which before run along *Baldwin-ſtreet*, (now ſo called) and drove a mill at *Baldwin*'s *Croſs*; for which purpoſe the Mayor and Commonalty, as well of *Temple* ſide, as for the town of *Briſtol*, bought ſo much ground (as is parted from St. *Auguſtine's* ſide) of Sir *William Ambrudſtone*, for certain monies, by writings and covenants between them.

Thus theſe two towns were incorporated into one, both on the *Somerſet* ſide and *Glouceſter* ſide. They had uſually on every *Monday* a great market at *Stalling Croſs* (now *Temple Croſs*) --- and in *Briſtol*, a market in *High-ſtreet*, every *Wedneſday* and *Friday*, which made it ſo very troubleſome for the people to paſs from one ſide unto the other, that it was at laſt reſolved to build a bridge of ſtone. But the narrowneſs and inequality of the arches, and the largeneſs and irregularity of the piers, are ſo great, as to make this a very ill-contrived bridge: For the whole breadth of the river, from north to ſouth, is about 200 feet; the bridge containing four arches, and three ſolids or piers, of different dimenſions, from 35 to 23 feet thick: ſo that, according

cording to this diſpoſition, the greateſt water way is not more than 100 feet: and, conſidering the impediment, there is but half the width of the river for the water to paſs; ſo that the river, near 200 feet wide, is ſuddenly forced through a channel of 100 feet, which makes the navigation very hazardous and troubleſome.

The Gentlemen that projected this bridge of *Briſtol*, which was both a great and laudable undertaking, ought to be remember'd with the higheſt gratitude: But why they made the arches ſo narrow, and the piers ſo large, is not eaſily accounted for; unleſs the ſame reaſon be given, as was for *London* Bridge, by *Peter*, of *Cole Church*, who ſays, That it was deſigned, by the narrowneſs of thoſe arches, to reſtrain the ebbing of the tide, the better to preſerve the navigation of the river above the bridge.

Some are of opinion, at this time, that if the river had its free courſe, it would ebb away ſo faſt, that there would be ſcarce any navigation above the bridge, a little time after high water. This allegation has no weight with me, nor can I agree to it; being of *Scammozzi*'s opinion, That all bridges over great and navigable rivers (eſpecially where the tide ebbs and flows) ſhould have much larger

larger arches than piers. And if the arches of *Briſtol* Bridge had been wider, I am certain it had been better in general.

What relates to the upper part of this bridge, may be ſaid in a few words.

That the breadth of it was formerly ſufficient for all manner of carriages and paſſengers, there is no doubt: But how it came to be embarraſſed, or by what means that nuiſance of building upon it has been conniv'd at, is to me ſurpriſing. For to erect a bridge for a ſafe and open paſſage, and afterwards to ſtraiten and incommode that paſſage with houſes, ſo as to make it difficult for two carriages to paſs by one another, without endangering the lives of foot paſſengers, or driving them into thoſe very houſes for their ſecurity, muſt be very abſurd; in that it perverts and deſtroys the principal benefits that can accrue from a bridge. And, indeed, it is wonderful how thoſe very buildings do ſubſiſt; for one half of the houſes ſtanding upon the extreme parts of arches, or ribs only four feet thick, built with ſmall ſtones, and the other half hanging over in the air, muſt certainly make the backs of theſe tender arches ſuffer much, by that unequal preſſure; which accounts for the ſeveral ſettlements in the piers and arches.

And as for the appearance of thoſe houſes on either ſide of the bridge, it is ſo diſagreeable, that it expoſes the ſkill of the projectors, and ſinks their taſte down to the loweſt ebb.

It is hoped, that in the city of *Briſtol*, which is of ſuch extenſive commerce, in other reſpects well managed, and now increaſed to ſo great a degree, there will not be one perſon but will think the immediate improvement of this bridge abſolutely neceſſary, and readily promote it, (as alſo the building another, if it ſhould be found, on mature conſideration, to be wanted) for a better communication of trade, and the joint advantage of both ſides the water; as 'tis well known to every one, how inconvenient and hazardous the preſent one is to paſs, either under or over it, by the houſes above, and the ſize of the piers below. But as there are great difficulties in finding ways and means for raiſing the neceſſary ſums for one bridge, I can't conceive how money can be had for the erecting of two.

However, the great piers of the preſent bridge, afford us a fair aſſiſtance for amending it, and making the navigation more eaſy and ſafe, to preſerve the lives, goods, and veſſels of the citizens, *&c.* by taking away the greateſt part of the two piers on the ſouth ſide,

which

which will make the center arch about 45 feet diameter, and the other two about 37; which was the method uſed at the city of *York*; and they are now doing the ſame with *London* bridge; (as the largeneſs of the piers retarded the floods:) and this will let the water paſs through without interruption, as it will have not only a more free paſſage by 20 feet, than the preſent four ruinous arches admit of; but the chief current of the river will then run more over to *Redclift* ſide; by which means the veſſels on the *Back* will lay more ſecure from all great floods and freſhes.

As to the new bridge over the river *Avon*, ſome are for placing it at the *Counter Slip*; others at *Hawkins's Lane*; but if it was placed there, 'tis ſaid it will be too near the old bridge; and placed at the Slip, 'tis ſaid it is too remote. Therefore it muſt be put into ſome intermediate place; which cannot be done neither, as it will be in the bend of the river: Conſequently the veſſels, with the ebbing and flowing of the tide, would ſtrike obliquely againſt the abutment on St. *Peter*'s ſide. The ice alſo, in the winter, muſt have the ſame oblique direction againſt that ſide; and, in time, would injure the foundations of

the abutment, greatly endanger the navigation, and demoliſh that part of the bridge.

I was thinking to recommend the place; but, upon ſecond conſideration, I think it better not. And, as there are only thoſe two places above-mention'd, I ſhall leave it to the publick to pleaſe themſelves in the choice of the ſituation; and to the great wiſdom of the legiſlature, to order it as they ſhall think moſt convenient, for the benefit, ſafety, and duration of the intended bridge. Therefore ſhall paſs them over, by only remarking, from my own obſervations of the river, That if a bridge is carried over at the *Counter Slip*, it muſt be by two 60 feet arches, and a 15 feet pier in the middle of the river; as the veſſels go up on one ſide, and come down on the other; which water way will be equal to the openings of the old bridge (if finiſhed on the preſent ſcheme.) But if a bridge is built from *Hawkins's Lane*, it muſt be a ſingle arch of a large diameter.

It muſt be obſerved, that the lighter-men paſs now at the ſecond and third quarters; but when the old bridge is finiſhed, they will be able to paſs in part of the firſt quarter: conſequently may do more buſineſs in every tide than formerly. And, as the river ſpreads itſelf,

itſelf, at the firſt and ſecond quarters, upwards of 140 feet wide upon a medium above the bridge, it becomes neceſſary the arch ſhould be of a diameter equal to all the openings of the new bridge; eſpecially as the lighters will, by the courſe of the current, be obliged to traverſe the river under this arch, to prepare for going in a ſtraight line through the center arch of the old bridge (when alter'd.)

As to the expence of either bridge, 'tis impoſſible to be aſcertained, unleſs the foundations are firſt proved by boring; as at *Weſtminſter*, and all other works of this nature. Beſides, there muſt be a center drawn, and ſo contriv'd as not to ſtop the navigation; elſe it will be as impoſſible to calculate the quantity of timber (as it is how much ſtone.)

It muſt alſo be obſerved, from the eſtabliſhed laws of ſtrength, that the ſame materials that turn an arch of any dimenſions, will not turn one double its diameter, with equal ſtrength. The conſtruction of this arch is undoubtedly a principal part of architecture, which does not conſiſt ſo much in ſuperficial talk, as in a good judgment and ſound reaſoning both in the principles and practice of that art. I ſaw, the other day, a deſign at the *Exchange Coffee Houſe*, handed about for this purpoſe,

purpoſe, with a talking eſtimate of ſomething about 4000*l.* (but without particulars) which ſeemed to pleaſe in general; and, if not detected, might introduce a kind of thinking founded on falſe principles, to the prejudice of the publick. Therefore I think it my duty ſlightly to mention this affair: For it is certain, that to build ſuch a ſtupendous arch over a wide and deep river, where the current is ſtrong and impetuous, and perhaps the bottom inſecure of itſelf to build on, will exerciſe the utmoſt ſkill and induſtry of the moſt knowing perſon in the buſineſs of bridge-building, to conduct them with reputation and ſafety, and can never be done with up river ſtone, as propoſed: eſpecially as an arch of that extent, and uſe, muſt be eſteemed a bold and daring undertaking, even with the beſt materials. Beſides, had the ſchemer (whoever he was) been maſter of ſo much geometry, as to have known whether an ellipſis was ſtrongeſt placed on the conjugate or tranſverſe diameter, he would have immediately ſeen his error; and, inſtead of a ſemicircular arch, would have produced, for that purpoſe, a chain curve inverted; or rather, in more familiar terms, a chain, or catananian arch, (which is the curve line, a rope, hanging freely

freely between two points of ſuſpenſion, forms itſelf into) which is eſteemed, and proved by the beſt mathematicians, to be much the ſtrongeſt arch; and is by far the beſt choſen for this purpoſe; as it will admit of a center that will leaſt affect the navigation; for ſuch a center muſt be truſſed. And there is a good deal of ſkill required to make a center of this kind, which muſt bear, perhaps, two or three thouſand tons before the arch is finiſhed, ſo far as to be relieved by keying in.

As to the talking eſtimate of 4000 *l.* it ſeems to be a greater abſurdity than the choice of the arch: For, be it known, the center for the largeſt arch at *Weſtminſter* bridge, of 76 feet diameter, erected on the bearers, was contracted by Meſſrs. *King* and *Barnard* (Carpenters) for 850 *l.* Then it may be thought, that one double the diameter, will coſt double the ſum: I anſwer, no: but it will coſt three times that ſum, including iron-work, *viz.* 2550 *l.* And I am as certain, that the neceſſary apparatus, ſuch as, floating ſtages, fenders, booms, engines, pumps, coffer-dams, ropes, blocks, hanging ſcaffolds, *&c. &c.* will at leaſt make up the remaining 1450 *l.* therefore I have no occaſion to carry this eſtimate any farther.

What

What I have obſerved of the inconveniency of the old bridge, and what I have ſaid concerning a new one, is not the product of party, malice, or ill-nature. If any one takes it ſo, they wrong me; for none can have a greater regard, and more hearty wiſhes, for the improvement and proſperity of this city, than myſelf.

What I am obliged to ſay, is rather with concern, than envy; and I cannot help lamenting, when I obſerve any thing that ſhould be for the uſe and honour of this valuable city, does not riſe up equal to the dignity of it, and the benefit of the community.

Theſe hints I have mentioned but tenderly, but they may not be unworthy the moſt ſerious conſideration of the publick.

AN ACCOUNT

Of ſome remarkable

STONE BRIDGES

ABROAD:

And what the beſt Authors have ſaid concerning them.

TO give a better encouragement to the good undertaking of *Briſtol* bridge, it may not be amiſs to mention what works of the ſame kind have been done by other nations.

Italy being eſteemed the ſeat of arts, as it was the ſeat of empire, in juſtice to her, I will firſt make ſome ſhort remarks on what the *Italian* authors have ſaid concerning the ſubject I am now upon; and alſo take a ſhort review of ſome of the works which are there to be found.

The learned artiſts have offered various deſigns of bridges, eſpecially the renowned *Palladio*; and are not only models for us, but his propoſals are well conſidered, and the deſigns beautiful; therefore ſhall give an extract of what he has ſaid.

After having firſt mentioned ſome gigantic bridges, as that of *Caligula* and *Trajan*, &c. he relates what bridges were over the *Tyber*, at *Rome*, antiently, and what are ſtill remaining at this day; alſo mentions ſome others in *Italy*.

The bridges over the *Tyber*, at *Rome*.

The Old Bridges.	Now remain, and called.
Pons Ælius	*Pont St. Angles.*
Pons Janiculenſis	Now ruined.
Pons Ceſticus	*Pont Siſto.*
Pons Fabricius	*Pont San Bartholomeo.*
Pons Senatorius	*Pont Caſpi*, or *Quatro Capu.*
Pons Sublicius	*Sancta Maria.*
Pons Milivius	Ruined.
	Ponte Molle.

He does not mention what number of arches might be contained in each bridge, or give any dimenſions of them: but I have been informed there were five arches in each bridge.

He ſays, the triumphal bridge was very magnificent, (as were moſt of the others) and much adorned with ſtatues and ornaments, as the bridge of St. *Angelo* is at preſent.

1. The bridge St. *Maria*, at *Rome*, is thus proportioned: The piers one third of the opening; the arches ſemicircular.

2. The

2. The triumphal bridge has the piers one half of the arch, and the arches are ſemicircular.

3. The ſame proportion has that now called *Quatro Capi*.

The next bridge ſpoken of by *Palladio*, is the bridge of *Rimini*, or *Ariminium*, ſaid to be built by *Auguſtus Cæſar*. It is really commendable, and moſt worthy obſervation for ſtrength and beauty. It is divided into five arches, the middle ones are each 25 feet, and the two others next the banks are 20 feet wide each; all the arches are ſemicircular, and the piers about half the opening.

The bees, or ſaliant angles, are right angles. There are niches, or tabernacles, on the ſide of the bridge, very agreeable; alſo a cornice is continued the length of the work, the whole being exceeding beautiful.

His deſign of the bridge over the *Bachilione*, at *Vicenza*, hath three arches; the middle one 30 feet wide, and the other are 22 feet and a half each; they are ſegments, or parts of circles, and the plumbit one third leſs than the radius.

The piers are one fifth of the great arch, *viz.* 6 feet wide, or thick; the lengths are 15

feet high to the impoſt; the badeau is one ſixth part of the leſſer arch.

The bridge of the *Razoone*, at *Vicenza*, hath three arches.

This is much in the ſame form as that over the *Bachilione*, and thus divided: The middle arch 29 feet, the two ſide ones 25 each, the piers one fifth of the opening.

He gives a propoſition for a bridge, being a deſign of his own, and very fine and beautiful, in the ruſtick ſtile. It is divided into three arches, the middle one 60 feet wide, and the two ſide ones each 48 feet wide.

The arches are ſegments, or portions of circles; the piers are 12 feet thick, being one fifth of the arch, and the impoſt ſufficiently above any floods that can come, crown'd with a beautiful cornice and parapet; from the impoſt to the crown of the vault, is 16 feet high; the bandeau, or archivault, is one tenth of the arch. It is alſo adorned with niches and ſtatues.

That deſign of *Palladio*, lib. 3. cap. 13. of three arches, is of moſt admirable beauty, ſtrength, and conveniency; but it is moſt adapted for a mercantile city, where the rivers are moderate and governable, and where there are few wheel carriages.

It is adorned with porticos, logias, and colonades, covered over on each ſide, and accommodated for the reception of a concourſe of people, like a forum or exchange.

The arches over the canal are ſemicircular; the piers are one third of the width of the arch, and the bandeau, or arch ſtones, one tenth. This was deſigned for the moſt populous trading city in *Italy*.

His deſigns of wooden bridges are moſt ingenious and uſeful; but as I am engaged for thoſe of ſtone, I need not offer remarks on the other ſort.

And this is all I need mention concerning what *Palladio* ſays of the ſtructures of ſtone bridges. Theſe ſpecimens, or examples, here inſtanced, will aſſiſt us in works of this nature; which, like all other edifices, ſhould be convenient, beautiful, and durable; but the latter can never be expected from a bridge built with rubble ſtone.

It is not ſo eaſy a matter to build a bridge over a river ſo rapid as the *Avon*, as thoſe imagine who have not been acquainted with works of this nature. But ſhould this city be induced at laſt to cauſe a bridge or bridges, for the ſake of cheapneſs, to be built with the ſame kind of ſtone as the old bridge, inſtead of the beſt

beſt materials, I muſt beg leave to remind them of the vaſt difference in the duration of the two kinds: which may ſupport what would elſe ſeem an extravagant account.

From the remains of *Roman* bridges, ſome almoſt entire ſtand to this day: The *Ælian* bridge, the work of old *Romans*, is ſtill over the *Tyber*, and is called the bridge of St. *Angelo*: The *Quatro Capi* bridge, is the *Fabrician* bridge, named from *Fabricius*, its great founder: and the ruſtick bridge, called at this time St. *Mary's*, is the famed *Senatorian* bridge of antient *Rome*.

All thoſe remain in a condition that does great honour to their builders, and will, in the eye of reaſon, plead far beyond words.

And, as I cannot ſpeak in preference to any bridges that have been built of ſmall ſtones, I therefore think it would not only be a very ill-tim'd frugality to build a bridge or bridges in *Briſtol* of ſuch, but would ſink the noble ſcience of architecture down to the loweſt degree.

SOME

SHORT OBSERVATIONS

ON LAYING

FOUNDATIONS:

By *PALLADIO.*

WHAT *Palladio* ſays touching thoſe fabricks, cannot be brought as a general rule, without ſome exceptions. He directs that,

1*ſt.* Abutments of bridges, next the banks, ſhould be built moſt firm and ſolid, becauſe they hold in the whole ſeries of arches from ſpreading; and if the banks are not of ſolid foundations, they muſt be made ſo by art.

2*dly*, That the number of piers ſhould be equal, that there may be an open arch in the middle.

3*dly*, That if the bottom of the river is a ſmall ſtone gravel, or very ſtiff clay, the foundations are partly made; but if the bottom is a looſe ſand, then the ſame muſt be pil'd and plank'd, to reach the firmer ground.

4*thly*, The

4*thly*, The way he propoſes to lay the foundation, is with coffer dams; one leg to be built after another, and then the arches to be turned.

5*thly*, That the thickneſs of the piers ought not to be leſs than a fifth part of the arch, nor more than one fourth of the breadth; that they ought to be made with large ſtones, well cramped and tied together with iron run in with lead, alſo good cement, *&c.*

6*thly*, That the becks or ſpurs ought to be made in a right angle, the arches made very ſtrong, and large ſomering or vault ſtones, well bound and cramped, to bear any weight of carriages that may come on them.

7*thly*, That the ſemicircular arch is the ſtrongeſt, and moſt beautiful of a regular one; and that they muſt be paved at the top with convenient footways, and proper drains.

8*thly*, That the bridge ought to be placed where it may be moſt convenient to the inhabitants, but by no means next the bend or elbow of the river.

A

SHORT ACCOUNT

OF SOME MORE

FOREIGN BRIDGES

And their DIMENSIONS;

And the Opinions of ſome of the beſt Authors.

SCAMMOZZI has treated much of bridges, and touching the laying of their foundations in divers ſituations.

He generally recommends piling, as the ſafeſt way for the foundations. He ſays, he laid two deſigns before the ſenate at *Venice*, for the *Pont Rialto*; one of three arches, and the other conſiſting of one large arch, which he propoſed to lay over the great canal, with piles of timber drove into the ground, then with net work of timber upon them, and planks of oak upon the net work, on which the ſtone was to riſe with the largeſt and moſt durable that could be got.

He propoſed to build that famous arch, but it is allowed that *Michael Angelo* built it in the year 1591.

He ſays much about piling foundations in many great bulidings; as the tower in the piazza *St. Mark*, which is 37 feet ſquare, and 339 feet high, ſtanding all upon piles; and tho' this is ſuch a preſſing weight, it ſtands firm.

I muſt not omit mentioning the wonderful bridge of *Trajan* over the *Danube*. If authors don't miſtake, it was a ſtupendous piece of work, and built of ſtone of the largeſt ſort and weight. The number of arches were twenty. They ſay, the height was 159 feet; the width of each arch was 150 feet from pier to pier, and ſome ſay 170. The thickneſs of the piers is 50 feet, ſome ſay 60 feet: ſo that, by this reckoning, the river was 4600 feet, or 7 furlongs, which is more than four times the length of *London* bridge.

This was a ſurprizing undertaking, and, indeed, what the *Romans* themſelves were aſtoniſhed at; as appears by the ranting inſcription they put on it when finiſhed.*

Their policy was alſo as ſurpriſing as the work, *viz.* that this expenſive undertaking ſhould be performed by *Trajan*, and demo-

* *Providentia Auguſti vere Pontificis (virtus Romana quid non domat?) ſub jugo ecce rapidus & Danubius.*

liſhed

liſhed by *Adrian*, the next ſucceeding Emperor.

One would be glad to know by what method they laid the foundation in ſo large a river, and of ſo deep a channel, which hath a great many rivers pouring into it, that keep up its floods.

Scammozzi has laid down a ſcheme, which he ſuppoſes they might go by; but it is only a conjecture; and whether he is in the right, is not eaſily proved.

He offers four ways of laying foundations in deep and large rivers.

1*ſt*, To ſhut up the river, in parts, on one ſide, and then on the other, by driving a double row of piles fill'd in with good chalk and clay, or ſome cloſe materials; then to pump out the water from the incloſed part, and clear out the mud; after that, to pile the foundations to the extent of the intended pier, and then to begin your foundation of ſtone upon a platform of planks. Thus did the antients: But we ſuppoſe it different, if it was not in ſhallow rivers.

N. B. This is no other than what we do by coffer dams, made of timber and planks, and is what the *French* call *batterdeaux*.

2*dly*, His ſecond method is by ſounding the river, levelling the floor, and preparing a grillage of oak, ſtrong, well pinn'd, and bound faſt together with iron, and kept upon the ſurface of the water by large hulks or lighters, with large cables and other machines, having a thick ſtratum of large ſtones laid on this frame of timber; the ſtones being well cramp'd together, and the joints filled with ſtrong *Padua* lime, mortar, pozzoli terrace, or cement, and then letting them down gently to the bed of the river by proper machines and cables.

This was practiſed at the port of *Oſtia*, in the time of *Claudius*.

And *Dragnet Reys* did the ſame at *Conſtantinople*, at the ſtately moſque he built in the ſea.

3*dly*, Another method was by turning the river another way, or making ſeveral channels to ſink the water; then with numbers of workmen to make a dam with piles, above and below where the bridge is to ſtand, quite croſs the river, and ſo turn the ſtream into the new channel; then to clear the earth and mud away, where the foundation of the bridge muſt be laid, and bring the piers above the water; after this to let the water return into its old channel.

4*thly*, He

4thly, He believes that *Trajan* muſt needs make uſe of the following method, in building that bridge over the *Danube*, viz.

To take an elbow or bend of the river, where it made a peninſula, as the *Thames* and ſundry other rivers do in ſome places, and cut out a direct canal through the neck of ground or iſthmus; then to build the bridge with eaſe, and upon dry ground; and afterwards to open the paſſage through the ground left at each end of this new bed or channel, whilſt the bridge is building; then turn the river through it, being a more direct courſe, making ſtrong dams on the old bent channel, to divert the ſtream from its former courſe. But if it was performed ſo, it was a work fit only for a *Roman* Emperor and a *Roman* army, to perform.

The *Rialto* at *Venice*, is that maſter-piece of art, allowed to be built by *Michael Angelo*, *Anno* 1591, over the great canal of that city. It is true, there is neither much of the tide, nor much current of the water: However it is eſteemed a noble undertaking.

Doubtleſs this huge machine is raiſed on piles, as the whole city is; the churches of St. *Mark* and St. *George* alſo, and all the publick buildings.

The

The arch is a ſegment of a circle; the ſpan is 98 feet and a half *Engliſh*; and the plumb to the crown of the arch from the water is about 23 feet. This bridge is much celebrated.

There is alſo an antique bridge at *Verona*, with large arches, the particulars of which I could never be informed of.

AN EXTRACT

Relating to ſome

BRIDGES in *FRANCE*.

THERE are many magnificent bridges in *France*, and ſome lately rebuilt, being very extraordinary, and of large ſpans. And as Mr. *Gautier* has taken a great deal of pains about them, I ſhall make uſe of his account, for our better information.

The *Pont Royal*, at *Paris*, was built *Anno* 1685. He ſays it was directed by Mr. *Manſart*; but it appears by the drawings of Mr. *Romaine*, a *Dominican* friar, that he had the management of the work.

The river is about half the breadth of the *Thames*, at *London*. This bridge is built with ſtone of the *Seyne* at *Paris*, over againſt the grand pavilion of the *Thuilleries*, and was made purſuant to the plan ordered by the King.

The length of the bridge is 426 feet *Engliſh* from one key to the other, and the parts of it are as follow:

Two

Two abutments next the banks, four piers, and five arches. The thickneſs of the piles or piers is 15 feet *Engliſh* in the naked, 51 feet 8 inches long in the ſquare parts; and the pier-heads are advanced 15 feet at each end of the piers, terminating in right angles their points.

The ſaid piers, at a level with the top of the water from the foundation or bed, have a larger thickneſs for the ſet off, which makes the plinths or parts in the water 16 or 17 feet *Engliſh* in thickneſs.

The five arches are in their ſpan as follow, *viz.* The middle arch is 77 feet wide in the clear. The arches on each ſide are 74 feet in the clear. The two arches next the abutments are 68 feet and a half in the clear.

The height of the grand arch, being eliptical, is, from the ſpringing to the crown or key, 26 feet *Engliſh.* The other four arches are eliptical, and riſe in proportion to their ſpan from the key to the ſpringing, which gives the bridge a gradual pent.

The breadth of the bridge in the middle, for coaches and horſemen, is 32 feet and a half *Engliſh* wide: And the foot ways on each ſide 9 feet 9 inches *Engliſh* wide, poſted in with ſtone, and all well paved.

The

The parapet on each ſide the foot way, are 2 feet thick and well cop'd, in height 3 feet 3 inches.

He then proceeds to the particulars of materials and work, *&c.* and ſays, this famous fabrick was erected in the river, the general depth of which is 7 *Engliſh* feet, by the help of *batterdeaux*, or, as we call them, coffer-dams, placing all the piers upon piles of oak timber, which piers are guarded at the bottom by what they call *Crech de la pile du pont*, inſtead of ſterlings, which is a border of great ſtones, well cramp'd, and laid 3 feet below the bed of the river.

The bridge at *Blois*, over the *Loire*, built by order of *Lewis* XIV. after the plan of Sieur *Gabriel*, is about 932 feet *Engliſh* long, from one quay to the other, conſiſting of two abutments on the banks, ten piers and eleven arches.

The abutments ſally or project 6 feet from the banks, and are in thickneſs 39 feet *Engliſh*, all the breadth of the ſaid bridge; and riſe from the loweſt water almoſt 24 feet.

The two piers of the grand arch, are each 17 feet and a half.

The piers that ſuſtain the two arches on each ſide, and the grand arch in the middle,

are 22 feet 6 inches each in thickneſs, and the ſix others are 16 feet 3 inches each in thickneſs.

The length of the ſaid piers are 49 feet *Engliſh*; their ſaliant angles, or points, ending at right angles, being advanced 16 feet *Engliſh* towards the ſtream, and 10 feet 10 inches at the other end.

The height of the grand middle arch is, from the ſurface of the loweſt water to the under ſide of they key ſtone of the vault of the ſaid arch, 36 feet 10 inches *Engliſh*.

The ten other arches are lowered with a proportionable pent from the middle of the bridge to the entrance.

The breadth is 45 feet 6 inches between the walls of the parapets, the whole length of the bridge; the thickneſs of the parapet wall is 2 feet 2 inches, to make the ſaid breadth 49 feet 10 inches.

The road for coaches and carriages is 30 feet wide between the two banquets, or foot ways, which are 7 feet 7 inches wide each, and raiſed about a foot above the pavement of the coach way.

The walls of the quays on each ſide the new bridge next the city, and on the other ſide next the ſuburbs of *Vienna*, were new built, and extended in length conſiderably, all the

works

works being built in a magnificent manner with large ſtones.

The foundations and piers of this vaſt machine ſtand upon oak piles, and the water of the river was kept off by the help of coffer-dams, or, as they call them, *batterdeaux*, during the time of bringing the piers above the level of the water.

The bridge is well pav'd on the coach and foot ways, and on each ſide guarded with ſtone.

There are other eminent bridges in *France*, *viz.*

The bridge at *Avignon*, built with ſtone, and divided into eighteen arches. The length of the whole bridge is, by eſtimation, 500 toiſes, or 3000 feet *French*. The arches muſt have been very large that divide the ſtream; for this is a vaſt length for the eighteen arches. It was begun *Anno* 1176, and finiſhed in the year 1188; ſo it was twelve years in building.

Part of the bridge was broke down in the diſpute between *Benedict* and *Boniface*, *Anno* 1385, and continued neglected till the year 1670; and then by the violence of the froſt and ice, more of the arches fell down. There ſtill remains the pier, with the chapel of St. *Nicholas* upon it, on that ſide next the city.

The bridge of St. *Eſprite*, is of a more magnificent taſte than that of *Avignon*, and much celebrated. It is divided into nineteen arches, and ſeven ſmall ones.

Some of the arches are upwards of 120 feet in the ſpan, or width from pier to pier. The whole length of this bridge is computed at 2600 feet.

The bridge at *Lions* is diſpoſed into twenty arches; ſome of which are very large. Authors ſay, upwards of 90 feet.

The *Pont du Guard*, is an amazing ſtructure, built by the antients; the piers are but 13 feet thick, and ſupport the weight of a triplicated arcade.

Some of the lower apertures are 60 feet wide, and the height is 150 feet.

There are other remarkable bridges; but it is not neceſſary to carry this account any farther.

A

SHORT ACCOUNT

OF

LONDON BRIDGE.

MR. *Stow* obſerves, from *Linſtead*, that there was no better communication between *London* and *Southwark*, than a ferry; which was inſufficient for the carrying on the buſineſs of two ſuch populous and extenſive places. The citizens, however, were content with it, either thinking a bridge would be too expenſive, or the undertaking *too difficult*, or jealous, it may be, that if a bridge ſhould be built, *the trade might be ſome way diverted*, and perhaps into a *new channel*.

This ferry at laſt falling into the hands of a maiden gentlewoman, ſhe built a religious houſe for ſiſters, near the church of St. *Mary Saviour*'s, and conſigned over the profits of it to their uſe: But that houſe of the ſiſters being afterwards converted into a college for prieſts, and they reflecting upon the great inconveniencies

conveniencies occaſioned to paſſengers, by the many lets and hindrances of the ferry, cauſed a bridge of timber to be built, and, for a conſiderable time, kept it in repair; till at laſt, from the great expence of ſuch repairs, and the many interruptions of publick buſineſs during ſuch repairs, it was reſolved to erect a new bridge of ſtone; which, by the aid and aſſiſtance of ſome great men, and contribution of the citizens, who were at length convinced of its great conveniency and advantage, was accordingly carried into execution, and accompliſhed.

The antiquity of the wooden bridge is not abſolutely aſcertained; but *William*, of *Malmſbury*, ſays, it was ſtanding at the time when *Swayne*, King of *Denmark*, beſieged the city of *London*, *Anno* 994, and was in being in the time of King *Stephen*, *Anno* 1136; it was alſo repaired in the year 1163.

Thus much ſays Mr. *Stow*, of the wooden bridge, maintained 215 years, partly by the revenues of its own land, partly by the liberal benefaction of ſundry eminent and publick-ſpirited perſons, and partly by the aids of ſeveral intereſted and adjoining counties.

In the year 1176, the ſtone bridge was begun near to the bridge of timber, but ſomewhat

what more to the weſt, and was finiſhed in the year 1209.

At the laying the foundation of this bridge, Mr. *Stow* ſays, that the courſe of the river was turned from *Batterſea* to *Rotherithe*; but whether this can be made appear, is not ſo certain: Many hiſtorians have thought it but a conjecture: Nor is it altogether unlikely, but that the canal, which was digged by *Swayne*, King of *Denmark*, when he beſieged *London*, *Anno* 994; and opened again by *Canutus*, his ſucceſſor, on the like occaſion, *Anno* 1016; might lead ſome hiſtorians into that opinion, that the river was turned.

The celebrated Sir *Chriſtopher Wren*, I obſerve, was of opinion, that when the foundation of *London* bridge was laid, the courſe of the *Thames* was not turned, but that every pier was ſet upon piles of wood, which were drove as far as might be under low water mark; on which were laid planks of timber, and upon them the foundation of the ſtone piers. There are various opinions concerning theſe piers and ſterlings.

I am of an opinion, which is very probable, that the ſterlings were made afterwards, to keep the foundations of the piers from being undermined by violent floods; which might have

have been done, as has been experienced in other countries, by laying a border of large ſtones round the feet of the piers.

And ſomething like this ſeems to be done at *Briſtol* bridge, either when it was firſt built or ſince.

The whole breadth of the river from north to ſouth, is near 900 feet; the bridge containing twenty arches, nineteen of which were open, and one filled up or obſcured. There are alſo eighteen ſolids, or piers, of different dimenſions, from 34 to 25 feet thick.

I own the ſagacity of the builders, for placing the grand great pier in the middle of *London* bridge; and, I am of opinion, they did it for the reaſons following, *viz.*

1. To be a ſteadying of the whole machine, inſtead of making an angle, as it is in the famous bridge at *Prague*, and in ſome of the bridges in *France*.

So this fortreſs was placed in the middle of the bridge, to ſtem the violence of the floods, ice, and all other accidents, that might be forced againſt it.

2. That if by any accident from the ice and floods, or undermining any of the piers, ſome of the arches might fall, as five did *Anno* 1282; yet, by the help of this great buttreſs,

buttreſs, though this damage was done on one ſide, the arches on the other ſide of the buttreſs ſtood firm; ſo that there was leſs expence, and greater encouragement, to make the reparation.

And it is not unlikely but that was one of the reaſons why ſo large a pier was built in the center of *Briſtol* bridge, if I may be allowed to compare ſmall things to great; unleſs it was to afford them an opportunity to ſhew their piety, by erecting a chapel on it; which readily induces one to believe, that they had a greater ſenſe of their duty, than the preſent times can produce. This appears by the rebuilding St. *W--b--gh*'s C----h. I am no pariſhioner; but it muſt redound to the honour of thoſe who are, that they have ſpared neither cloſe ſtudy nor unwearied application to accompliſh a neceſſary fund for the compleating ſo good a work; and the generous example of St. *James*'s, and other pariſhes, towards their aſſiſtance, deſerves no ſmall degree of praiſe. Yet, notwithſtanding all their endeavours; and their œconomy, in building the eaſt end in a plain manner, and endeavouring to preſerve the north iſle; I am informed, that the ſum falls ſhort. However, I am in hopes, as the publick at large will be

greatly accommodated by the vaſt additions not only to *Small-ſtreet*, but to *Corn-ſtreet* alſo, by removing the *Tolzey*, that they will take this benefit into conſideration, and give ſuch aſſiſtance as is neceſſary.

I am ſenſible I ought to apologize for this digreſſion; but the intention, I hope, will plead in my behalf.

A SHORT ACCOUNT OF THE Grand BRIDGE of *Weſtminſter*.

BEFORE I proceed to deſcribe the preſent *Weſtminſter* bridge, I believe my readers will not take it amiſs, that I premiſe a ſhort deſcription of the firſt deſign of this bridge; which was to have been a moſt curious wooden ſuperſtructure, of the invention and deſign of the late ingenious Mr. *James King*, a carpenter, to be erected on ſtone piers, like Mr. *Dicker's* bridge at *Walton on the Thames*. In the year 1738, the model was ſhewn and explained to numbers of the firſt rank in the kingdom, and to many others, and generally approved of, as the beſt of its kind. But as the deſign of it has ſince been engraved and printed, I muſt refer the reader to that deſign for further particulars.

However, the publick in general were highly diſguſted at the thoughts of having a wooden bridge in the metropolis of the *Britiſh* Empire; therefore the commiſſioners agreed

to have one of ſtone, which was accordingly begun, and the firſt ſtone laid with great ceremony on the 29th of *January*, 1738-9, by the late Right Hon. the Earl of *Pembroke*, &c.

In *November* 1747, the bridge, and the roads and ſtreets on both ſides, were compleatly finiſhed, and the whole was performed in ſomething leſs than eight years from the laying of the firſt ſtone.

But in the fatal months of *May* and *June* 1747, the weſtern 15 feet pier of *Weſtminſter* bridge was perceived to ſettle, very gently at firſt, but ſo much towards the end of *July* 1747, that it was thought abſolutely neceſſary to take off the ballus-trades, paving, and part of the ballaſt, that laid over the ſaid pier, and the two arches adjoining. By the continuration of the ſettling of this pier, thoſe arches loſt their regular ſemicircular figure; conſiderable openings in the joints, ſhewed them in danger; the keys were ſplit and broken; one of them actually fell out of the great arch into the river, and another was taken down to prevent its falling down, *&c.* Therefore the two arches were immediately ordered to be taken down, by the board of commiſſioners.

The maſons begun rebuilding the two arches in *April* 1748; and though, by their contract, they

they were allowed twelve months time to finiſh them in, after the centers and hoiſting ſtage were compleated for their uſe, (the materials all at hand) they uſed ſuch diligence, that both the arches were keyed in *July* following; ſo that there really was much leſs time employed in rebuilding them, than in taking them down. The centers were eaſed and ſtruck from under them in the next month, and neither of the new arches ſettled or followed their centers ſenſibly. The three following months were employed in building the counter arches, filling the ſquadrels, building the foot ways and balluſtrades, in clearing the bridge, and gravelling the carriage way the whole length of it; and, after working at laſt for a few weeks day and night, *Weſtminſter* bridge was compleatly finiſhed on *Sunday* the 18th of *November*, 1750; eleven years nine months and twenty one days after the laying the firſt ſtone, which was on the 29th of *January*, 1738-9.

The whole length of the bridge, that is to ſay, the whole breadth of the river *Thames*, from the *Woolſtaple Dock* to the oppoſite wharf, being 1220 feet, is diſtributed into thirteen large arches, two ſmaller arches, fourteen piers, and two abutments, of the following dimenſions: *Weſt-*

	Feet	
Weſtminſter	76	Abutments
Abutment arch	25	
	12	Abutment pier
An arch	52	
	12	A pier
An arch	56	
	13	A pier
An arch	60	
	14	A pier
An arch	64	
	15	A pier
An arch	68	
	16	A pier
An arch	72	
	17	The eaſtern middle pier
The middle arch	76	
	17	The weſtern middle pier
An arch	72	
	16	A pier
An arch	68	
	15	A pier
An arch	64	
	14	A pier
An arch	60	
	13	A pier
An arch	56	
	12	A pier
An arch	52	
	12	Abutment pier
Abutment arch	25	
Surry	76	Abutment
Whole breadth	1220	of the river *Thames*

Length of the 2 abutments	152	Solids	350 feet
Section of the 14 piers	198		
Span of the 15 arches	870	Voids	870

Section of the river *Thames* 1220 feet.

The

The whole breadth of the bridge, as it was fixed by the commiſſioners, is 44 feet from out to out. The top of the bridge is divided into three walks, the middle one 28 feet in breadth, for the horſes, cattle, and carriages; which is more than ſufficient for three carriages, and two horſes to paſs, abreaſt: The ſide walks for the foot paſſengers, are raiſed about a foot above the carriage way, the breadth of each being near 7 feet in the clear.

The number of operations, engines, machines, made uſe of in building this bridge, were moſt ingenious, and of the beſt kind: But after all, nothing pleaſed me more than the curious inventions put in practice after the ſinking of the pier, in order to preſerve its ſymmetry and ſtrength. And, as I ſaw that alſo executed, I will, the firſt opportunity, as well as my memory will admit, explain the ingenious method by drawings, with proper references, and ſend it to the *Exchange Coffee Houſe*, for the entertainment of the curious; which, I preſume, will not be unacceptable at this particular juncture; as alſo a deſcription of the coffion and method uſed in building the piers.

A SHORT ACCOUNT OF ROCHESTER BRIDGE, AND *Some other* BRIDGES *of Note, in* ENGLAND.

THE bridge at *Rochester* is built much in the ſame ſtile with that at *London*, only that it may be eſteemed a better in ſome reſpects.

1. Becauſe no houſes are placed upon it, to make it uſeleſs.

2. The arches are wider than at *London* bridge.

3. It ſpands a noble and deeper river, 550 feet wide, and is diſpoſed into eleven arches; the wideſt is more than 40 feet; moſt of them above 30 feet wide.

The greateſt water way is 340 feet, and ten piers make 190 feet; at low water, the

ſterlings

ſterlings take up ſo much of the courſe, that there is left but 230 feet for the tide of flood and ebb to act in.

The foundation of this bridge muſt be laid upon piles; and the laying the foundation of this fabrick in ſo deep a river, where there is ſo large a flow of the ſea, was no ſmall undertaking.

There are ſeveral ſtone bridges over the *Severn*, of large extent, *viz*. *Glouceſter*, *Worceſter*, *Shrewſbury*, *Bridgenorth*, and others.

The ſtone bridges over the *Trent*, are not many; that at *Nottingham*, and that at *Burton*, are the moſt conſiderable; the laſt has thirty arches.

The tower at *Boſton*, in the Fens of *Lincoln*, is an admirable piece of maſonry, riſing near 300 feet on a ſmall baſe, conſidering its height. I mention it, becauſe it can have no other foundation than piles of wood, to bear ſuch an immenſe preſſure.

There are ſeveral ſtone bridges in the north of *England*, worthy our remarks and attention.

The two bridges at *Durham* and *Biſhop Aukland*, are very large in the ſpan, being in the clear near 90 feet. There are prodigious floods ſometimes paſs under them.

The ſtone bridge at *Berwick upon Tweed*, is an admirable piece of work, begun by Queen *Elizabeth*, *&c.*

The water is very deep; at low water 18 feet, and when the ſea flows in to high water, it advances 18 feet more: in all 36 feet.

It is guarded with ſome ſterlings, and the piers are founded upon piles of timber, as tradition informs us; which is not impoſſible. They are alſo of opinion, that the water was kept off, during the laying the foundation, by coffer dams.

If their accounts are not miſtaken, there are ſeventeen arches; the largeſt arch is eſtimated at upwards of 80 feet, and ſome others at 70 feet wide; the ſaid arches ſtill leſſening towards the *Engliſh* ſhore.

There is a noble arch built near *Newcaſtle upon Tyne*, for the conveniency of the coal-trade; which muſt be here mentioned, on account of the largeneſs of its ſpan, being 120 feet in the clear. But it muſt be alſo obſerved, that the ſtones are proportioned to its ſpand, otherwiſe it would be of a ſhort duration.

The bridge at *Blenheim* conſiſts of three arches; the principal or grand arch ſpans 101 feet and a half, and the other on each

ſide

ſide 30 feet; the center arch having no ſtone leſs than two and twenty hundred weight, (a cloſer excepted.)

The north of *England* was notably ſtored with many magnificent caſtles, churches, ſtone bridges, and other publick buildings: and *Scotland* was alſo ſtored with the ſame. Nor indeed is it at all wonderful, when we conſider that they are plentifully ſupplied with excellent free-ſtone, and good artiſts. There are now in the two principal cities, *Edinburgh* and *Glaſgow*, many fabricks worthy the attention of the curious.

But, to finiſh what I have drawn to ſuch a length, I ſhall only mention the ſtone bridge at *Glaſgow*, conſiſting of ſeveral larger, and ſome leſſer arches, over the river *Clyde*; the largeſt arch is in the middle, and all the other arches diminiſhing gradually towards each ſhore, make an eaſy acceſs to that beautiful city.

There is likewiſe a ſtone bridge at *Aberdeen*, very well worth our notice: it has an arch of near 80 feet, which is ſo high, that a conſiderable veſſel may ſail through it.

Thus much may ſuffice for our preſent purpoſe. The benefits of ſuch publick buildings as bridges, are as well known as the neceſſity

of them. Where they are magnificent and commodious, the honour and advantage of them equally redound to the publick.

But where the ſtructure of them is not required to be ſo beautiful, it will at leaſt be required, that it be convenient, ſafe, and durable: All which, and much more that might be ſaid, I humbly leave to the ſerious conſideration of my good friends, and fellow-citizens; for whoſe information I have preſumed to lay before them, a few thoughts, for the more effectual performance of that moſt laudable and glorious undertaking, the rebuilding *Briſtol* Bridge, (and building another, if it ſhould be thought neceſſary for the emolument of the city in general;) which, when compleated, will be a laſting monument of the zeal and publick-ſpiritedneſs of the citizens of *Briſtol*.

When I firſt reſolved to furniſh the publick with this pamphlet, I did alſo reſolve to be ſilent concerning the ways and means of eſtabliſhing a fund for carrying this neceſſary work into execution; it being a ſubject now under conſideration by a committee of gentlemen, every way better qualified than myſelf,

and

and choſen by the voice of the city, for that purpoſe.

Therefore nothing remains further on this head, but that I aſſume the liberty to addreſs myſelf to the Gentlemen of the ſaid Committee, on whoſe agreement and judgment, in a great meaſure, the ſucceſs, or failure, of this important work, depends.

As this very great and intereſting work was firſt undertaken by the Gentlemen of the Corporation; and who, afterwards, to avoid every the leaſt appearance of partiality, generouſly left the conſideration of this important matter to the city at large; which city (if I may be allowed the expreſſion) you are at preſent, as being freely choſen to repreſent them on this occaſion; may it never be ſaid, that this great work failed in your hands! May it never appear, that private intereſt, on this or that occaſion, influenced you ſo as to gain the aſcendency over Publick Good! But may your reſolutions in this affair, confirm the high opinion your fellow-citizens entertain of you; of which the great confidence they have now placed in you, is

the

the higheſt and moſt undeniable proof! That harmony, unanimity, perſeverance, and publick ſpirit, may direct your councils and endeavours, is the ſincere wiſh of the publick in general, and in particular of,

GENTLEMEN,

Your very Humble Servant,

A CITIZEN.

POSTSCRIPT.

I HOPE it will be thought altogether needleſs to apologize for either ſtile or diction, being ſo confined by buſineſs, as not to have time to put it in a better dreſs. And, as I will not be drawn into a paper war, on this or any other account whatſoever, I ſhall never loſe any time in replying to any thing that may appear hereafter, by way of remarks or ſneers upon this deſcription and account; being conſcious, I have ſaid nothing of ſelf-praiſe, conceit, or ill-nature, I ſhall therefore reject them, as unworthy of my notice.

FINIS.

POSTSCRIPT.

I HOPE it will be thought altogether needless to apologize for either File or diction, being so confined by bulinels, as not to have time to put it in a better dress. And, as I will not be drawn into a paper war, on this or any other account whatsoever, I shall never lole any time in replying to any thing that may appear here or elsewhere by way of remarks or Ineers upon this description and account; being conscious, I have said nothing of felf-praile, conceit, or ill-nature, I shall therefore reject them, as unworthy of my notice.

FINIS.